

CLAIM AMENDMENTS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) An array composition comprising:
a) a substrate with a surface comprising discrete sites; and
b) a population of microspheres comprising at least a first and second microsphere subpopulation,

wherein ~~the microspheres of~~ said first microsphere comprises ~~subpopulation comprise~~ a plurality of different target analytes comprising sequences from a first individual and wherein said first microsphere further comprises a first identifier binding ligand which identifies said plurality of different target analytes from said first individual; and

wherein the microspheres of said second microsphere comprises ~~subpopulation comprise~~ a plurality of different target analytes comprising sequences from a second individual and wherein said second microsphere further comprises a second, different identifier binding ligand which identifies said plurality of different target analytes from said second individual, wherein said plurality of different target analytes are covalently attached to each of said microspheres, and

wherein said microspheres are randomly distributed on said surface.

2. (cancelled)

3. (cancelled)

4. (currently amended) The array composition according to claim 13 wherein said identifier binding ligands are ~~ligand is~~ a nucleic acids ~~acid~~.

5. (currently amended) The array composition according to claim 13 wherein said target analytes are identifier binding ligand ~~is~~ a nucleic acids.

6. (currently amended) The array composition according to claim 5 wherein said target analytes ~~nucleic acids~~ comprise genomic DNA.

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7. (original) The array composition according to claim 1 wherein said target analytes are proteins.

8. (original) The array composition according to claim 1 wherein said substrate is a fiber optic substrate.

9. (original) The array composition according to claim 1 wherein said substrate is plastic.

10. (original) The array composition according to claim 1 wherein said discrete sites are wells.

11. (cancelled)

12. (cancelled)

13. (cancelled)

14 (currently amended) An array composition comprising a substrate comprising discrete sites wherein each of said discrete sites comprises a microsphere having a different identifier binding ligand and a plurality of different covalently attached target analytes comprising sequences from different individuals, wherein said different identifier binding ligands each identify said plurality of different target analytes from different individuals; wherein said discrete sites are at a density of about 10,000 to 1,000,000,000 discrete sites per cm².

15. (original) The array composition according to claim 14, wherein said plurality of different target analytes are covalently attached to said substrate.

16. (original) The array composition according to claim 14, wherein said plurality of different target analytes are covalently attached to microspheres, wherein said microspheres are distributed in said discrete sites.

17. (original) The array composition according to claim 14, wherein said target analytes are nucleic acids.

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18. (original) The array composition according to claim 17, wherein said nucleic acids comprise genomic DNA.

19. (original) The array composition according to claim 14, wherein said target analytes are proteins.

20. (original) The array composition according to claim 14, wherein said substrate is a fiber optic substrate.

21. (original) The array composition according to claim 14, wherein said substrate is plastic.

22. (original) The array composition according to claim 14, wherein said discrete sites are wells.

23. (cancelled)

24. (cancelled)

25. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 100,000 to 10,000,000 discrete sites per cm².

26. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 10,000,000 to 1,000,000,000 discrete sites per cm².

27. (original) The composition according to claim 1 or claim 14, wherein said discrete sites are at a density of about 10,000 to 100,000 discrete sites per cm².

28. (currently amended) A composition comprising a population of microspheres, said population comprising at least a first and second microsphere subpopulation, wherein ~~the microspheres of~~ said first microsphere comprises subpopulation ~~comprise~~ a plurality of different target analytes comprising sequences from a first individual, wherein said first microsphere further comprise a first identifier binding ligand which identifies said plurality of different target analytes from said first individual, and ~~the microspheres of~~ said second microsphere comprises subpopulation ~~comprise~~ a plurality of different target analytes comprising

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sequences from a second individual, wherein said second microsphere further comprise a second, different identifier binding ligand which identifies said plurality of different target analytes from said second individual, wherein said plurality of different target analytes are covalently attached to each of said microspheres.

29. (canceled)

30. (canceled)

31. (currently amended) The composition according to claim 28, wherein said identifier binding ligand is a nucleic acid.

32. (original) The composition according to claim 28, wherein said target analytes are nucleic acids.

33. (original) The composition according to claim 32, wherein said nucleic acids comprise genomic DNA.

34. (original) The composition according to claim 28, wherein said target analytes are proteins.

35. (cancelled)

36. (cancelled)

37. (new) The composition according to claim 1, 14 or 28, wherein said plurality of different target analytes on each of said microspheres is composed of about 2 to 100,000 different target analytes.

38. (new) The composition according to claim 14, further comprising a population of microspheres randomly distributed at said discrete sites, wherein individual microspheres in said population each comprise a plurality of different target analytes comprising sequences from an individual and wherein each said microsphere further comprises a unique identifier binding ligand.